CLIMATE READY
BOSTON
Results from Boston Research Advisory Group (BRAG)

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WHAT’S IN STORE FOR BOSTON’S CLIMATE?
CLIMATE RISK FACTORS

- Sea Level Rise
- Coastal Storms
- Extreme Precipitation
- Extreme Temperatures
THE NUMBER OF VERY HOT DAYS WILL INCREASE

- Days above 100°F
- Days above 90°F

**Likely Range of Days Above 90° in Future**
- 20 to 40 days including up to 5 days above 100°F
- 25 to 90 days including up to 33 days above 100°F

**1990**
- 11 days above 90° now

**2030**

**2070**

*Baseline represents historical average from 1971-2000
Upper values from high emissions scenario. Lower values from low emissions scenario.

Data source: Rossi et al. 2015
RAINFALL FROM STORMS WILL INCREASE

* "Today" baseline represents historical average from 1948-2012
Confidence intervals are not available for these projections but are likely large, so these numbers should be considered as the middle of a large range

Data Source:
Boston Water & Sewer Commission
GREENHOUSE GAS EMISSIONS REDUCTIONS IMPACT FUTURE SEA LEVELS IN BOSTON

**LOW EMISSIONS SCENARIO**
(MAJOR EMISSIONS REDUCTION)

**MEDIUM EMISSIONS SCENARIO**
(MODERATE EMISSIONS REDUCTION)

**HIGH EMISSIONS SCENARIO**
(BUSINESS AS USUAL)

RELATIVE SEA LEVEL RISE* IN FEET (ABOVE 2000)

* Relative sea level rise is the change in sea level resulting from a combination of increases in ocean height and decreases in land surface elevation ("subsidence").

Data Source: BRAG Report
The Greater Boston Research Advisory Group (G-BRAG)
Oct 1, 2018 through Dec 31, 2021
Overview

- Using best published information and scientific expertise, update and expand the climate change projections of the 2016 BRAG report to the entire Metropolitan Area Planning Council (MAPC) region – the 101 cities and towns within the Greater Boston Area
- Produce one to two Special Reports on topics of interest to the region
- Managed by the School for the Environment at UMass Boston (E Douglas and P Kirshen, Joint Principal Investigators), Engagement by Urban Harbors Institute with Engagement Assistance from the MAPC
Greater Boston Voices
Climate Change Concerns
METHODS

Purpose: To determine what climate change information is most useful to communities when planning and preparing for climate change.
METHODS: Survey

N = 396
METHODS: Survey – Profession of Survey Respondent

N = 387
Results
Results: Survey of Professionals

Do you think climate change is currently impacting, or will impact in the future, the Massachusetts city(ies)/town(s) where you work?

98% yes
What climate change risk factors concern Greater Boston communities?

Risk Factor: type of climate or weather event causing an impact. Examples include temperature, sea level rise, and extreme precipitation.
Results: Summary

Sea Level Rise
Coastal Erosion
Flooding
Storm Surge
Saltwater Intrusions
Groundwater
Wind

Extreme Cold
Extreme Heat
Extreme/Subtle Temp. Changes
Seasonal Changes

Flooding
Stormwater
Groundwater
Drought
Erosion
Wind
Snow, Rain, Hail, Ice

Temperature
Circulation
Marine chemistry
Habitats
Marine life
Coastal businesses
IMPACTS
precipitation
inland storms

Transportation
Property
Utilities
Stormwater

Natural Resources
Emergency Response
Economy/Society
Governance/Management
### RESULTS

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<th>Risk Factor</th>
<th>Impact</th>
<th>Design Value</th>
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<td>Flooding</td>
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<td>Stormwater</td>
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<td>River flooding</td>
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<td>Natural Resources</td>
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<td>Precipitation</td>
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<td>Duration of drought</td>
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<td>Erosion</td>
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<td>Well Data</td>
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<td>Number of days of Precipitation</td>
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<td>Snow</td>
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<td>Water Resources</td>
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SPECIAL REPORTS

Groundwater
Stormwater and Regional Flooding
Trees
Disease Outbreak
Glaciers And Ice Melt

Accurate Heat Maps
Local Agriculture
Marine Resources/Ocean Acidification
Feasibility Of Managed Retreat
Saltwater Intrusion

Housing Market/Property Values
Shoreline Management
Climate Change Mitigation
Contaminated Sites Risk
Native and Invasive Species
GBRAG Special Report #1: Groundwater

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